RHIC SHUTDOWN SCHEDULE – REV. 1

R. Zaharatos – March 11, 2003

SHUTDOWN REQUEST PRIMARILY FOR ACCESS TO BY STAR EXPERIMENTERS

SHUTDOWN PERIOD: WEDNESDAY MARCH 12, 2003, 0900 TO 1700HRS(MOST SYSTEMS READY FOR BEAM BY 1630HRS)

AGS – CONTROLLED ACCESS(1030-1400HRS)

BOOSTER RESTRICTED ACCESS – 1030-1430HRS

RHIC TUNNEL RESTRICED ACCESS PERIOD - 0915 to 1330(START OF SWEEPS WHERE JOBS HAVE BEEN COMPLETED) – HP surveys required for beam dump and injection line.

RHIC IR's – RESTRICTED ACCESS FOR STAR AND BRAHMS(SWEEPS BEGIN AT 1700 OR SOONER)

PRIMAY JOBS:

JOBS STATUS CODE: **C** complete **IP** in-process **RS** reschedule **CAN** cancelled
***** additions

AGS RING ACCESS JOBS

1. Main Magnet serial number inventory(M. Hemmer)
2. Test Ring exhaust fans(AC Grp)
3. Modify North Conjunction Gate for simultaneous release(Acc. Ctrls.)
4. Modify North Gate for simultaneous release
5. Fire Safety inspection
6. IPM – Investigate C5 and E15 Steerer Magnet wiring
7. Change PA tube in RF station E
8. RF System – replace feedback amplifiers in stations B, D, and IJ

AGS EXTERNAL

1 Check out CDC.AGS.AUXRF – Bldg. 929Ctrls. Grp.)
2 Firmware change in CDC-ABI-L18 device controller for L20 Septum and A4 Kicker – L18 Hse.(Ctrls. Grp.)
3 Replace ion pump power supplies where possible in A10/E18/H10 Hses.
4 Repair all IPPS as required(A10/E18/H10 Hses.)
5 Replace control card for C-17 turbo(may shut down sector)
6 Troubleshoot vacuum problem with Splitter BB3 P.S.(E18 Hse.)
7 Siemens – replace pressure meter on pedestal #3, replace 2 questionable brushes for the generator exciter, clean exciter brush rigging insulators.
8 Investigate power ref. for cycloconverter(Bannon/Ctrls. Grp.)
9 Siemens pedestal #2 south – check intermittent loosing of signal for pressure trending(Bannon)
10 Siemens – install pre-ampl. for accelerometers for ped. #2(Bannon)

BOOSTER RING ACCESS JOBS

1. Replace emergency light batteries at plug door
RS 2. Check and drain air lines
3 Replace RF station E6 measure flow
4 Inspect D3 and take pictures for future job plan
5 Check D6 area and alcove for possible air problem(Water Sys.)

BOOSTER EXTERNAL

1 Check Bldg. 914 Pump Hse. spare air compressor unit
2 Replace switches on timing decoder board with jumpers.(Ctrls Grp)
3 Install PPMR service switch(Bannon)
4 Terminate BPM cables(only if machine is off)
5 Quad Reference Magnets(2) – remove measure flows(Bldg. 930A)
6 Modify logic for DH1 and LTB Beam Stops(Access Ctrls.)
7 PPMR – hook up old computer and wire new and old PPMR in parallel(Bannon)
8 Horizontal Quad P.S. – install modified reg. brd(Bannon)

LINAC TUNNEL

1 Check HEBT 5 SEM
2 SNS Laser work(Sikora)
3 Install cover plate in HEBT

LINAC EXTERNAL

1 Change hydrogen bottle for proton source
2 Install new 400w RF Ampl. in LL Drive
3 Check LEBT kQ28 datacon card

NSRL EXTERNAL

1. Bldg. 958 heating – check heaters at outdoor A/C units inside berm fence

NSRL TUNNEL

1. Complete and test light controls for target area(Access Ctrls.)

X/Y ARCS

1. Check water filter bag(FES) – Gate WEG2

RHIC TUNNEL

1. P.S.'s – repairs(See List)
2. Stoichastic Cooling(sect. 2) – install thermocouple equip.(Gassner)
3. Inspect entire tunnel for condition of ice balls.(Zapasek)
5. Install p/p outlets in 1002(Elect.)
6. Check/read SRD's at 1C, 7A, 9C, and 11A
7. Stoicastic Cooling – start thermocouple installation
8. Injection Kickers – Swap out Blue #3 and #4
9. Roman Pots – Modifications/repairs/testing for administrative controls(sect 1&2)
10. Cryo controls: access to cabinets at 7Q6(7GE1 Gate) and cabinet at 9Q14(Gates 10GE1 and 9Gi1)
11. Cryo - 6Q3 vibration measurements with circulator off(Gate 6GE3)

Controls Systems:

1. 1004B – remove SIS Scaler board from 4b-ps4 and install in 4b-ps5. Install V102 time line decoder board in 10a-ps3.
2. 1010A – Install V102 time line decoder board in 10a-ps3.
3. Check AC power reset modules(1003C/3Z1, 9C/9Z1)
4. Replace Lo Res Module for bi9-snk7-1.4ps(1009C/9Z1)

FOLLOW-UP REPAIRS FROM RESULTS OF TUES. ICE BALL INSPECTION

Ice Team:
Fred Orsatti
Gregory P. Heppner

Location:	Type of Fault:
O10Q3 Magnet	(Triplet) Found Thermostat not connected to the tree, Ice beginning to form around the flange. (Access thru Bldg. 1010A, gate 10GE1)
11-DX Magnet	(DX) Heater does not appear to be working, floor fan seems to be keeping the ice off for now. However, Ice is forming on the opposite side flange where the fan is not cooling. (Access thru Bldg. 1012A, gate 12GE1)
O12Q2 Magnet	(Triplet) Heater does not appear to be working, floor fan seems to be keeping the ice off for now. However, Ice is forming on the opposite side flange where the fan is not cooling. (Access thru Bldg. 1012A, gate 12GE1)
O-03Q21 Magnet	(CQS370) Heater does not appear to be working, Ice is forming up the horizontal top portion of the tree towards the power lead box. (Located at Alcove 3C, access thru gate 2GE2)
I02Q4 Magnet	(Cold to Warm) Heater does not appear to be working, Ice is forming up the horizontal top portion of the tree towards the power lead box. (Access thru gate 2GE2, turn left towards alcove 3A)
O-09Q10 Magnet	(CQS10) Found the Thermostat bypassed. (Access thru gate 8GE1, turn right)

Ice Team: March 11, 2003
Rich Conte
Joe Drozd

4-DX Magnet	(DX) Heater does not appear to be working, floor fan seems to be keeping the ice off for now. However, Ice is forming on the top portion of the tree where the fan is not cooling. (Access thru RF area)

VACUUM

1. Check remote operation: g7-tmp-pi3.1(sect. 7)
2. Remove screen from sector valves(sect. 1002/1010)
3. Replace gauges: Cryostat – bi12-cc-pi21, bi4-cc-pi21, g12-cc-pi2
   TMP – bi9-tmp-pi21, g3-tmp-pi1(sect. 3,4,9,12)
5. Bad cold bore gauge – yi11-cc-pc18(sect. 11)
6. Reconnect/replace TMPS cold cathode gauges:
   a/ y012-cc-pi14.2
   b) y05-tmp-pi6.1
   c) bi5-tmp-pi13.1
   d) bi5-tmp-pi21
   e) g7-tmp-pi1
7. Replace leaking rough pump at g2

RHIC EXTERNAL

1. Power supplies. See P.S. List
2. Pull cable to 4GE1, 4GE2, and 4GE3 gates from 1004B(Acc. Ctrls.)
3. PHOBOS – tower fan maintenance
4. 1004 – switch tower pumps
5. Install PLC software upgrade in 1010 / ***possible access required***

Control Systems:

1. Check V113 in 5C-PS3(1005C)

RHIC POWER SUPPLIES(Bruno)

IR Power Supplies

1. Ice Ball Checks. Replace thermostat that was bypassed at O10Q15D15. We also think we found a bad heater that PK and an electrician must investigate and possibly replace at O10Q8D8. The top part of the heater does not appear to be hot but the two side pieces of the heater do appear to be hot. Rich C, Bob, PK, electrician on repairs. Jeff, Tom, Mitch, Fred checking Ice balls.
2. Ceramic Feedthrough cleaning in sector 3 where ground fault was found.
3. In 1010A, if there is time we may want to check more tq power supplies for shorted IGBT's by looking at the AC current during a turn ON. No one.
4. Move new current regulator card from bi4-qd6-ps to y2-q6-ps because that p.s. runs up to 25A and I want to make sure this card is stable at higher currents. Don

5. Have a new current regulator card ready for q7 to reduce error. Maybe put new q6 card inside the new q7 at the same time. Test at 1012A. Don
6. Remove voltmeter and clamps from b12-q7-qp qpa. Don
7. Screw in more 3u chassis cards. 1012A and 1004B were started. Rich K
8. Possibly swap out firing card of y8-dh0-ps. No One.
9. Inspect buildings 1004B, 1006B, 1008B 1012A for broken internal fans on stand alone dynapowers. 1010A and 1002B were checked. Joe D and Gregg
10. Gasket doors of tq racks in 1004B. Mitch
11. Swap out current regulators and Time constant cards for yo4-qd3-ps (error=-760mV) and yo9-qd9-ps (error = 680mV). Don
12. y12-dh0-ps tripped to the Off state 3/8/03, swap out Control Card or?. Joe D and Gregg
13. y6-dh0-ps tripped the link on 3/9/03. the voltage was oscillating and then took off. The same thing happened on 12/19/03. We re-seated housekeeping p.s. connectors and the problem did not return until now. Replace hkps this time. Joe D and Gregg

QPA Work

1. Start replacing all QPA D connector hardware?? (b2-dh0-qp, yo8-qf8-qp and yo8-qd1-qp done) No One

Gamma-T Power Supplies

1. Go into alcoves and tighten AC connections of Gamma-T's in 3C, 7A, 7C, 9A. No One.

Magnet Work

1. Ceramic Feedthrough cleaning in sector 3 where ground fault was found.

Snake and Spin rotator p.s. Work

1. More p.s. testing to high current.
2. Label the rest of the circuit breakers.
3. Replace DAC for bi9-=snk7-1.4-ps and make sure setpoint has a small positive offset at zero. Also make sure p.s. still runs up properly.
4. Try and have a new time constant ready for spin rotators and/or go check snakes and rotators with a small step input and compare response.

Corrector Power Supplies: See Table below Brain and Gene (and maybe Jeff and Tom)

1. If there is time and people start checking looking for broken corrector fans by checking all alcoves.

Corrector P.S.	**Action (3/12/03)** **On all of these check AC connections and connections at the magnet.**	**Comments – What was really done- What was found**	***Serial Number***
Bo2-th6-ps	Indicates STBY-ERROR yet the p.s. is ON. Replace node card cable and inspect node card chips that were replaced. This p.s. also indicated Overvoltage once. Check tightness of all DC and AC connections. Especially DC. If nothing is found to be loose, replace p.s.		
Bi8-tv10-ps	Tripped OFF. Replace with a p.s. that has the new micro and the R and cap mod if available. If the p.s. is not available then just replace the micro in this p.s. Indicate what was done.		
Yo8-th2-ps	Trips on ERROR fault. This p.s. was swapped out by CAS on 3/4/03 because of an error fault and the new p.s. is doing the same thing. The current and voltage takes off while the setpoint stays at zero. Swap out complete p.s. with one that has new micro and if possible R and cap mod. This p.s. was swapped out once before CAS but it was swapped out because it tripped to the OFF state. It is not tripping to the OFF state anymore. Check all AC connections and DC connections at the p.s. and magnets too. Loose AC or DC connections could cause this problem as well. See one trip 3/6/03 02:26.		
Yi3-tv16-ps	Trips on ERROR fault. The current and voltage takes off while the setpoint stays at zero. Swap out complete p.s. with one that has new micro and if possible R and cap mod. Check all AC connections and DC connections at the p.s. and magnets too. Loose AC or DC connections could cause this problem as well. See one trip 3/6/03 07:26, many others on 3/6/03		
Yo4-th12-ps	Tripped OFF on 3/2/03. Replace with a p.s. that has the new micro and the R and cap mod if available. If the p.s. is not available then just replace the micro in this p.s. Indicate what was done.		
Yo8-dod3-ps	Tripped OFF. Replace with a p.s. that has the new micro and the R and cap mod if available. If the p.s. is not available then just replace the micro in this p.s. Indicate what was done.		
Yo8-tv11-ps	Tripped OFF. Replace with a p.s. that has the new micro and the R and cap mod if available. If the p.s. is not available then just replace the micro in this p.s. Indicate what was done.		
Bi9-tv18-ps	Tripped on an Overvoltage, 3/9/03 00:14. Check all DC connections. If nothing loose is found then replace entire p.s.		

Valve Box Work

1. Need to replace flashers at top of valve boxes for 2b and 6b.
2. Check light control chassis at 10A because no green lights work.
3. Check light control chassis at 12A because no red light on yellow valve box.
4. Check green light above blue valve box in 1002B.
5. Light control chassis in 1008B needs to be fixed. Opto logic is reversed.

Sextupole P.S.

1. yi7-sxd-ps tripped on a quench fault on 3/5/03 at 02:27. The setpoint, current, voltage and error glitched. Wfg was clean. Keep an eye on. This magnet string was already re-tightened once this year.

ATR Power Supplies

1. Run X-ARC90 in voltage mode.
2. Test SWM p.s. setpoint buffer.
3. Tom Nehring may swap circuit breakers 42 and 44, probably won't happen anytime soon.
4. If ground fault comes back on WQ3 p.s. try something else. AFB board was replaced 9:50 Wed 3/5/03.

XARC90 and YARC90 phase sequence relay jumpered out. Decide what to do for fix.
YARC90 phase sequence relay probably still good because LED lights